



NOFFZ
TECHNOLOGIES

MCU 30XX

MEASUREMENT CONDITIONING UNIT

FOR SCALABLE TEST & AUTOMATION



APPLICATION:

Add-on for Test Systems in R&D and Validation
Automated test equipment (ATE) and modular setups for production
Industrial test automation environments
Decentralized measurement within an adapter
High channel count applications for Monitoring Systems or Multi-DUT Tester

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MEASUREMENT CONDITIONING UNIT

The **MCU 30xx** is a flexible and scalable Measurement Conditioning Unit designed for decentralized test, measurement, and control applications. Built for modern validation and automation environments, it combines high-precision data acquisition, real-time communication, and seamless system integration in a compact, modular platform.

With advanced measurement capabilities and open interfaces such as REST API and MQTT, the MCU 30xx supports fast integration into both existing and new test architectures—whether as a standalone unit or part of a fully automated system.

FLEXIBLE SYSTEM INTEGRATION

- › REST API for low-latency communication
- › MQTT support for modern connectivity
- › Integration with open market products

DECENTRALIZED & SCALABLE ARCHITECTURE

- › On-spot deployment (local/decentral integration)
- › Standalone and 19" rack form factors

USER-FRIENDLY OPERATION

- › Web-based interface for configuration and control

EFFICIENT SYSTEM DESIGN

- › Power-over-Ethernet (PoE+) up to 25W
- › Reduced cabling and simplified installation



TYPICAL APPLICATION AREAS

It is ideally suited for a wide range of test, validation, and automation environments where flexibility and precise data acquisition are essential. It can be used in R&D laboratories as well as in production test systems, supporting both standalone setups and fully automated architectures.

Thanks to its modular design and decentralized integration capability, the MCU 30xx enables efficient implementation in automated test equipment (ATE), industrial automation systems, and distributed measurement applications, where reliable communication, synchronized measurements, and seamless system integration are critical for optimized performance and process efficiency.

NOFFZ VALUE

The MCU 30xx delivers a future-ready platform for modern test and automation systems by combining flexibility, scalability, and seamless integration. Its modular design enables tailored solutions that can be easily adapted to specific project requirements, while open communication interfaces ensure efficient integration into existing validation and production environments. Backed by NOFFZ's extensive expertise in global test and automation, the MCU 30xx helps customers accelerate development processes, improve system efficiency, and build reliable, scalable test architectures that evolve with future demands.

ADVANCED MEASUREMENT & CONTROL CAPABILITIES

It combines high-precision measurement, signal generation, and versatile I/O functionality within a single modular platform. Designed for modern test environments, it enables reliable data acquisition, control, and synchronization across distributed and automated systems.

HIGH-PRECISION VOLTAGE & CURRENT MEASUREMENT

The MCU 30xx provides accurate and flexible measurement capabilities for both voltage and current, supporting various measurement configurations to adapt to different test scenarios. High-resolution acquisition combined with wide measurement ranges allows reliable monitoring of both low-level and high-power signals.

- › Differential, pseudo-differential, and single-ended voltage measurement
- › Measurement range from mV up to 59 V with μ V-level precision
- › Current measurement from μ A up to 60 A with auto-ranging
- › Sampling rates from 250 S/s to 128 kS/s
- › Galvanically isolated measurement channels for stable operation

FLEXIBLE SIGNAL GENERATION & ANALOG OUTPUT

In addition to measurement, the MCU 30xx enables active test stimulation through integrated signal generation. This allows engineers to simulate real-world conditions directly within the system, improving validation accuracy and reducing the need for external equipment.

- › Waveform generation: sine, square, and rectangular signals
- › Frequency range from 0.1 Hz to 20 kHz
- › Prepared for future arbitrary waveform capabilities

COMPREHENSIVE DIGITAL & CONTROL INTERFACES

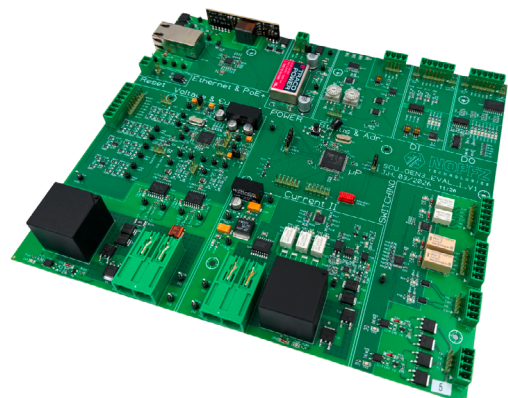
To support complex applications, the MCU 30xx offers a wide range of digital I/O and control options. These interfaces enable seamless interaction with external components and systems, making it suitable for both standalone setups and fully automated environments.

- › PWM input and output (e.g., for airbag or charge control)
- › Isolated digital inputs (5V - 24V)
- › Isolated digital outputs (3.3V - 24V, up to 300 mA)
- › Switching via reed relays, EMR, and MOSFETs
- › I²C communication interface
- › Integrated auxiliary power supplies (1.8 V, 3.3 V, 5 V)

DESIGNED FOR SEAMLESS SYSTEM INTEGRATION

The MCU 30xx is engineered for easy integration into modern test and automation architectures. Its modular concept and open interfaces allow flexible deployment in both centralized and decentralized systems, supporting scalable and future-proof test setups.

- › Standalone or rack-based deployment
- › Decentralized ("on-spot") integration capability
- › REST API and MQTT for fast communication
- › Compatibility with open market components and systems



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EXPERIENCE GLOBAL EXCELLENCE IN TESTING & AUTOMATION

At NOFFZ Technologies, our dynamic innovation and unwavering commitment to customer service have made us a global leader in testing & automation systems. With a worldwide network of locations in USA, Mexico, Germany, Hungary, Serbia, and China, we provide local expertise and prompt support to industries such as automotive, telecommunication, smart homes, medical technology, and semiconductors. Our market-leading technologies, combined with our international team of experts, ensure the successful implementation and operation of our cutting-edge solutions. Experience global excellence in testing & automation with NOFFZ Technologies today.

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